UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

_____

Ex parte SHAWN JOSEPH BARACZYK
and BRIAN ROBERT MURAS

_____

Appeal 2009-008207
Application 10/671,343
Technology Center 2400

_____

Before KENNETH W. HAIRSTON, MAHSHID D. SAADAT, and
THOMAS S. HAHN, *Administrative Patent Judges.*

HAIRSTON, *Administrative Patent Judge.*

DECISION ON APPEAL[1]

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[1] The two-month time period for filing an appeal or commencing a civil
action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing,
as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE"
(paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery
mode) shown on the PTOL-90A cover letter attached to this decision.

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1 to 11, 13 to 24, and 26 to 29. Claims 12, 25, and 30 have been canceled. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

Appellants' invention is concerned with executing a query in a database management system including encrypting structured query language (SQL) statements (Abs.; Title). Appellants disclose and claim a method, apparatus, and program product having a program code for (i) logging execution of an SQL statement in a database monitor, and (ii) displaying the execution log by displaying a decrypted representation of the SQL statement (claims 1, 3, 16, and 29).

Claim 1, reproduced below, is illustrative of the subject matter on appeal:

1. A method of executing a query in a database management system, the method comprising:

receiving an SQL statement from an application program coupled to the database management system;

executing the SQL statement;

encrypting the SQL statement to generate an encrypted representation of the SQL statement;

logging execution of the SQL statement in a database monitor by storing the encrypted representation of the SQL statement in an execution log managed by the database monitor;

displaying the execution log, including retrieving the encrypted representation of the SQL statement from the execution log, decrypting the encrypted representation of the SQL statement to generate an unencrypted representation of the SQL statement, and displaying the unencrypted representation of the SQL statement.

The Examiner relies upon the following as evidence of unpatentability:

Chan	US 5,713,018	Jan. 27, 1998
Urano	US 6,289,379 B1	Sep. 11, 2001

The following rejections are before us for review:

(i) Claim 29 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Appellants regard as the invention.

(ii) Claim 29 also stands rejected under 35 U.S.C. § 101 as being drawn to non-statutory subject matter.

(iii) Claims 1 to 3, 6 to 10, 14 to 16, 19 to 23, and 27 to 29 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Chan and Urano.

(iv) Claims 4, 5, 11, 13, 17, 18, 24, and 26 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Chan and Urano, further in view of Official Notice.

Indefiniteness Rejection of Claim 29

With regard to the § 112, second paragraph, rejection of claim 29, the Examiner finds that the term "'recordable computer readable medium'" to be indefinite from page 9, lines 16 to 20 of the Specification (Ans. 3 and 13-15).

Appellants contend (Br. 7) that the term "'recordable computer readable medium'" is definite.

Based on Appellants' arguments, the issue is: whether or not the term "'recordable computer readable medium'" is indefinite under § 112, second paragraph.

Non-Statutory Subject Matter Rejection of Claim 29

With regard to the § 101 rejection of claim 29 as being drawn to non-statutory subject matter, the Examiner determines that the term "'recordable computer readable medium'" could encompass signals or transmission media, thus could be transitory (Ans. 4 and 15-16). The Examiner cites page 9, lines 16 to 20 of the Specification for support that there is no clear definition of "computer readable signal bearing media" or "computer readable medium" that is limited to tangible and physical matter, and that the term "'recordable computer readable medium'" could include signals (Ans. 16).

Appellants argue (Br. 8-9) that the Specification at page 9, lines 16 to 20 makes it clear that the term "'recordable computer readable medium'" includes only tangible or physical media and excludes transitory and signal-type media (e.g., digital or analog communication links).

Based on Appellants' arguments, the issue is: whether or not the term "'recordable computer readable medium'" encompasses transitory media, and thus whether or not claim 29 is directed to statutory subject matter under § 101.

Obviousness Rejections of Claims 1 to 11, 13 to 24, and 26 to 29

With regard to the obviousness rejections listed *supra*, the Examiner relies upon Chan as describing the recited features of independent claims 1, 3, 16, and 29 of receiving, executing, and encrypting SQL statements (Ans. 4-5), and relies upon Urano (Ans. 5-6) as describing collecting log

information for monitoring computer systems (col. 1, ll. 9-11; col. 4, ll. 42-52), encrypting the execution records before logging them to protect the logs (col. 7, ll. 37-41), and displaying the execution log by decrypting the logs for an administrator to prevent error or attacks (*see* col. 7, l. 60 to col. 8, l. 1). The Examiner also determines (Ans. 5-6) that Urano discloses execution records are useful to detect errors or attacks and report them (*see* col. 7, ll. 27-35 and 60; col. 2, l. 45), and therefore it would have been obvious to enhance Chan's database management system using SQL statements to submit database commands and return command results to the client by encrypting and logging execution results (i.e., SQL statements) as suggested by Urano. The Examiner further determines that modifying Chan with Urano would have been obvious in order to monitor server computer operations in Chan and to collect and log execution records as taught by Urano (Ans. 6).

With regard to the obviousness rejection of claims 1, 3, 16, and 29, Appellants argue , *inter alia* (Br. 9-18), that Chan fails to teach encryption of an SQL statement in an execution log of a database monitor or in a database server, but only teaches encryption by clients followed by decryption by the server. Appellants also argue (Br. 9-15) that Chan fails to disclose storing the encrypted SQL statement in an execution log. Appellants argue (Br. 9-18) that Urano fails to (i) disclose or suggest managing an execution log with a database monitor, (ii) disclose decrypting an SQL statement stored in a log along with displaying the decrypted information to a user. Appellants also argue (Br. 9-18) that Chan and Urano fail to disclose or suggest (i) logging execution of an SQL statement in a database monitor by storing an encrypted SQL statement in an execution log managed by the database

monitor, (ii) encrypting an SQL statement and storing the encrypted representation in an execution log managed by a database monitor, and (iii) encrypting an SQL statement stored in an execution log of a database monitor, or decryption of an SQL statement to display the execution log.

With regard to claims 4, 5, 11, 13, 17, 18, 24, and 26, Appellants argue, *inter alia* (Br. 18-19), that although performance statistics and access plans are well known in the art, storing such information in an execution log for a database monitor in unencrypted form, while other execution information for a database query are stored in the same execution log in encrypted form, is not disclosed or suggested by the prior art.

Based on Appellants' arguments, the issue is: Do Chan and Urano taken in combination disclose or suggest the salient limitations of a method of logging a query execution in a database management system, as set forth in claims 1, 3, 16, and 29?

FINDINGS OF FACT

1. Appellants describe examples of "computer readable signal bearing media" used to carry out distribution of a program product as including, but not limited to, "recordable type media" (Spec. 9:10-17), and "transmission type media such as digital and analog communication links" (Spec. 9:19-20). Appellants' Specification at page 9, lines 16 to 20 defines a "program product" and "computer readable signal bearing media" as follows:

> . . . Program code typically comprises one or more
> instructions that are resident at various times in various
> memory and storage devices in a computer, and that,
> when read and executed by one or more processors in a
> computer, cause that computer to perform the steps
> necessary to execute steps or elements embodying the
> various aspects of the invention. Moreover, while the
> invention has and hereinafter will be described in the
> context of fully functioning computers and computer
> systems, those skilled in the art will appreciate that the
> various embodiments of the invention are capable of
> being distributed as a program product in a variety of
> forms, and that the invention applies equally regardless
> of the particular type of computer readable signal bearing
> media used to actually carry out the distribution.
> Examples of computer readable signal bearing media
> include but are not limited to recordable type media such
> as volatile and non-volatile memory devices, floppy and
> other removable disks, hard disk drives, magnetic tape,
> optical disks (e.g., CD-ROMs, DVDs, etc.), among
> others, and transmission type media such as digital and
> analog communication links.

(Spec. 9:6-20).

2. Chan describes a method of executing queries in a database
   management system (DBMS) including for receiving, executing,
   and encrypting SQL statements (Figs. 3 and 4; col. 1, ll. 6-11 and
   44-47; col. 1, l. 65 to col. 2, l. 2; col. 2, ll. 49-67; col. 3, ll. 12-60).
   Chan also describes an SQL interface procedure used by an
   information server (Fig. 4; col. 2, ll. 18-20). Chan describes an
   encrypted SQL string, Encrypt, including placeholder symbols,
   constant strings 242, and argument strings (col. 3, ll. 12-60). Chan
   describes encrypting with a private key and decrypting with a
   public key (col. 3, ll. 31-51).

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3. Urano describes collecting log information for monitoring
   computer systems (col. 1, ll. 9-11; col. 4, ll. 42-52), encrypting the
   execution records before logging them to protect the logs (col. 7, ll.
   37-41), and storing, reading, and restoring an execution log by
   decrypting the logs for an administrator to prevent error or attacks
   (*see* col. 7, l. 60 to col. 8, l. 1). Urano discloses execution records
   are useful to detect errors or attacks and report them (*see* col. 7, ll.
   27-35 and 60; col. 2, l. 45).

PRINCIPLES OF LAW

Indefiniteness

The test for definiteness under 35 U.S.C. § 112, second
paragraph is whether "those skilled in the art would understand what is
claimed when the claim is read in light of the specification." *Orthokinetics,
Inc. v. Safety Travel Chairs, Inc.,* 806 F.2d 1565, 1576 (Fed. Cir. 1986)
(citations omitted). Claims must "particularly point[] out and distinctly
claim[] the subject matter which the applicant regards as his invention." 35
U.S.C. § 112, ¶ 2.

Claim Construction

"During examination, 'claims ... are to be given their broadest
reasonable interpretation consistent with the specification, and ... claim
language should be read in light of the specification as it would be
interpreted by one of ordinary skill in the art.'" *In re Am. Acad. of Sci. Tech.
Ctr.,* 367 F.3d 1359, 1364 (Fed. Cir. 2004); *In re Morris,* 127 F.3d 1048,
1053-54 (Fed. Cir. 1997).

Non-Statutory Subject Matter

Section 101 of the Title 35 of the United States Code states:
"Whoever invents or discovers any new and useful process, machine,
manufacture, or composition of matter, or any new and useful improvement
thereof, may obtain a patent therefore, subject to the conditions and
requirements of this title." 35 U.S.C. § 101 (2002).

"A transitory, propagating signal . . . is not a 'process, machine,
manufacture, or composition of matter.' Those four categories define the
explicit scope and reach of subject matter patentable under 35 U.S.C. § 101;
thus, such a signal cannot be patentable subject matter." *In re Nuijten*, 500
F.3d 1346, 1357 (Fed. Cir. 2007) *reh'g en banc denied*, 515 F.3d 1361 (Fed.
Cir. 2008), *cert. denied*, 129 S.Ct. 70 (2008).

Obviousness

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the
Examiner to establish a factual basis to support the legal conclusion of
obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). The
Examiner's articulated reasoning in the rejection must possess a rational
underpinning to support the legal conclusion of obviousness. *In re Kahn*,
441 F.3d 977, 988 (Fed. Cir. 2006). Appellants must, on appeal to the
Board, demonstrate reversible error in the Examiner's position or rejection.
See id. at 985-86.

The test for obviousness is what the combined teachings of the
references would have suggested to the artisan. Accordingly, one can not
show nonobviousness by attacking references individually where the
rejection is based on a combination of references. *In re Keller*, 642 F.2d
413, 426 (CCPA 1981).

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ANALYSIS

Indefiniteness Rejection of Claim 29

Appellant's argument (Br. 7) that the term "'recordable computer readable medium'" is not indefinite in light of the description at page 9, lines 16 to 20 of the Specification is convincing. The term "computer readable signal bearing media" is described in the Specification as including, but not limited to, "recordable type media" and "transmission type media" (Spec. 9:16-20; FF 1). The computer readable signal bearing media is used to carry out distribution of the program product, which includes the "recordable computer readable medium" recited in claim 29. Appellants' Specification clearly describes that the "recordable computer signal bearing media" can include memory devices, floppy disks, hard disk drives, and digital and analog communication links (Spec. 9: 16-20; FF 1).

Claim breadth does not equate to indefiniteness in the facts of this case, since one of ordinary skill in the art would understand that a program product that includes a "recordable computer readable medium" as claimed and described in the Specification could include any one of the memory devices, floppy disks, hard disk drives, and digital and analog communication links described in the Specification. For the foregoing reasons, we find that claim 29 particularly points out and distinctly claims the subject matter which the Appellants regard as the invention. *See* 35 U.S.C. § 112, ¶ 2.

We find that the term "recordable computer readable medium" is not indefinite for failing to particularly point out and distinctly claim the subject matter which Appellants regard as the invention, and "those skilled in the art would understand what is claimed when the claim is read in light of the

specification." *Orthokinetics, Inc.,* 806 F.2d at 1576. Accordingly, we will not sustain the Examiner's indefiniteness rejection of claim 29 under § 112, second paragraph.

Non-Statutory Subject Matter Rejection of Claim 29

Claim 29 on appeal reads as follows:

29. A program product, comprising:

program code configured upon execution to log query execution in a database management system by generating an encrypted representation of an execution detail for a query executed by the database management system, and logging the execution detail for the query in an execution log for the database management system by storing the encrypted representation thereof in the execution log; and

a *recordable computer readable medium* storing the program code.

(Claim 29 (emphasis added)).

Appellants' claim 29 recites a "program product" including "program code" stored on a "recordable computer readable medium." The program product of claim 29, under the broadest reasonable interpretation in light of the Specification, requires a recordable computer readable medium as defined, if at all, in the Specification. *See Am. Acad. of Sci. Tech Ctr.,* 367 F.3d at 1364.

Appellants' Specification specifically discloses examples of "computer readable signal bearing media" used to carry out distribution of a program product as including, but not limited to, "recordable type media" (Spec. 9:10-17), and "transmission type media such as digital and analog communication links" (Spec. 9:19-20) (*see* FF 1).

Appellants' argument (Br. 8-9) that the Specification at page 9, lines 16 to 20 makes it clear that the term "'recordable computer readable

medium'"" includes only tangible or physical media and excludes transitory and signal-type media (e.g., digital or analog communication links), is not persuasive in light of the broadest reasonable interpretation of the Specification.

Taking the broadest reasonable interpretation, one of ordinary skill in the art reviewing Appellants' claim 29 in light of the Specification would interpret the term "recordable computer readable medium" to encompass transmission type media such as digital and analog communications links, which in turn may be a transitory signal (Spec. 9:16-20; FF1). Although the Specification does not use the word "signal," one of ordinary skill in the art would understand that program code stored on a recordable computer readable medium could be in the form of a signal or carrier wave. A claim directed to a signal (i.e., a computer program product embodied in a signal being sent from another computer via a computer network) does not fit within at least one of the four statutory subject matter categories under 35 U.S.C. § 101. *Nuijten*, 500 F.3d at 1357.

For the foregoing reasons, we find that claim 29 recites non-statutory subject matter and is not directed to an eligible "machine" or "manufacture" under § 101. The Examiner did not reversibly err in rejecting claim 29 as being directed to non-statutory subject matter, and we will sustain the rejection.

Obviousness Rejections of Claims 1 to 11, 13 to 24, and 26 to 29

The Examiner has established a factual basis, as well as provided articulated reasoning that possesses a rational underpinning, to support the legal conclusion of obviousness (Ans. 4-12 and 17-28). *Kahn*, 441 F.3d at 988; *Fine*, 837 F.2d at 1073. We agree with the Examiner's findings of fact

and conclusions of obviousness and adopt them as our own (*see* FF 2 and 3).
Because Appellants have not persuaded us of error in the Examiner's
rejections, and for the reasons that follow, we will sustain both of the
obviousness rejections before us on appeal. *See Kahn*, 441 F.3d at 985-86.

Appellants have not persuasively rebutted the Examiner's conclusion
that it would have been obvious to combine the teachings of Chan and
Urano. Appellants' main line of argument throughout the Brief is to assert
that the basic combination of Chan and Urano used in both of the
obviousness rejections does not disclose or suggest the features found in
claims 1, 3, 16, and 29 on appeal (Br. 9-17). Thus, Appellants have not
addressed what the combined teachings of the references would have
suggested to the artisan. Appellants attempt to show nonobviousness by
attacking Chan and Urano individually where the rejection is based on a
combination of references is not persuasive. *Keller*, 642 F.2d at 426.

This line of argument is not convincing since Chan describes the
recited features of independent claims 1, 3, 16, and 29 of receiving,
executing, and encrypting SQL statements (FF 2); and, Urano describes
(i) encrypting the execution records before logging them to protect the logs,
(ii) collecting log information for monitoring computer systems, and (iii)
displaying the execution log by decrypting the logs for an administrator to
prevent error or attacks (FF 3). Notably, Appellants admit (Br. 12) that
Urano discloses encryption of a log.

Appellants' contention (Br. 13-14) that Urano's column 7, line 60 to
column 8, line 2 fails to disclose displaying decrypted logs to a user is not
well taken, since Urano strongly suggests such a feature. Specifically,
Urano discloses decrypting received log information to store it in memory,

reading the log output by computer 1001 using computer 1011, and even restoring the log (col. 7, l. 62 to col. 8, l. 2).

Thus, the combined teachings of Chan and Urano disclose or suggest a method, apparatus, and program product having a program code for (i) logging execution of an SQL statement in a database monitor, and (ii) displaying the execution log by displaying a decrypted representation of the SQL statement. Accordingly, all of the salient limitations of claims 1, 3, 16, and 29 are encompassed by the combined teachings of Chan and Urano.

Appellants' arguments as to claims 10 and 23 (Br. 17-18), that Urano fails to disclose or suggest that both encrypted and unencrypted records can reside in the same execution log, are not convincing. Instead, we are persuaded by the Examiner's determination (Ans. 8) that since Urano teaches both *not* encrypting logged execution records (before col. 7, l. 35) and encrypting logged execution records (after col. 7, l. 35), it would have been obvious to create one encrypted set of logged records and alternatively one set of unencrypted set of logged records.

Appellants' argument as to claims 2, 8, 9, 21, and 22 (Br. 16-17), that even if Chan discloses encrypting SQL statements, Chan's SQL statements are not the same as the recited "values," is not convincing. Instead, we are more persuaded by the Examiner's findings (Ans. 6-9) that Chan and Urano disclose execution details including values that are passed to a host variable during execution. *See* Chan at col. 3, ll. 12-30 and 52-60 (describing constant strings 242 and argument strings used to replace the placeholder symbols in the encrypted string, "'encrypt'").

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In view of the foregoing, we will sustain the Examiner's obviousness rejection of claims 1, 3, 16, and 29, and claims 2, 6 to 10, 14, 15, 19 to 23, 27, and 28 which depend therefrom (over Chan and Urano).

Appellants' arguments as to claims 11 and 24 (Br. 18-19), that the Examiner fails to show a teaching in the applied prior art (i.e., Chan, Urano, and Official Notice) that performance statistics and access plans for a query exist unencrypted in a database monitor execution log at the same time as encrypted query details in the execution log, are also unconvincing.

Instead, we are more persuaded by the Examiner's determinations (Ans. 9-12) that (i) receiving SQL statements in unencrypted form was well known at the time of Appellants' invention (ii) it would have been obvious to receive some queries in unencrypted form to speed up processing and execution times without the added overhead of implemented security, (iii) generating performance statistics associated with program executions and queries was well known at the time of Appellants' invention, and (iv) it would have been obvious to include such statistics, as well as access plan information as well known in the art in the set of parameters logged by Chan as modified by Urano in order to implement security features to control program access.

In view of the foregoing, we will also sustain the Examiner's obviousness rejection of claims 4, 5, 11, 13, 17, 18, 24, and 26 over Chan, Urano, and Official Notice.

CONCLUSIONS OF LAW

Claim 29 is definite.

Claim 29 is drawn to non-statutory subject matter.

Chan and Urano taken in combination disclose or suggest the salient limitations of a method of logging a query execution in a database management system, as set forth in claims 1, 3, 16, and 29.

For the foregoing reasons, we find that the Examiner did not err in rejecting (i) claims 1 to 3, 6 to 10, 14 to 16, 19 to 23, and 27 to 29 as being obvious in view of the teachings of Chan and Urano, and (ii) claims 4, 5, 11, 13, 17, 18, 24, and 26 as being obvious over the combined teachings of Chan and Urano, further in view of Official Notice.

ORDER

The Examiner's decision to reject claim 29 under § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Appellants regard as the invention, is reversed.

The Examiner's decision to reject claim 29 under 35 U.S.C. § 101 as being drawn to non-statutory subject matter is affirmed.

The Examiner's decision to reject claims 1 to 11, 13 to 24, and 26 to 29 under § 103(a) as being obvious is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(v).

<u>AFFIRMED</u>

KIS

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